

## Effect of Storage Temperature on the Stability of Trivernolin

PREVIOUSLY WE REPORTED that under certain conditions of storage *Vernonia* oil and trivernolin undergo changes in their physical nature that are not always indicated by oxirane oxygen values (1). Of particular concern was the increase in viscosity that occurred during storage of trivernolin in a semisolid to solid state at 2–4°C. This instability at 2–4°C was further corroborated when trivernolin was stored and exposed to the surrounding atmosphere at –29°C, –16°C, 2°C, and 15°C for 6 months. The viscosity of the trivernolin stored at 2°C increased 30%; no measurable changes were found in the other samples.

Since this behavior seemed unnatural, another study was made. The trivernolin used in this experiment had been refined by treatment with adsorbents and was a higher grade product than that previously used. Two samples were stored and exposed to the surrounding atmosphere; one at room temperature (25–27°C)

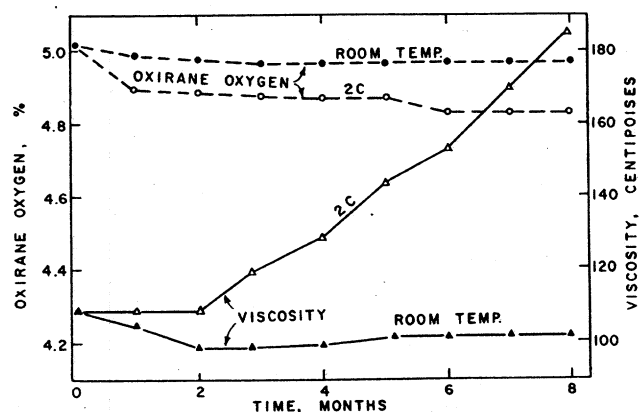


FIG. 1. Effect of storage on the viscosity and oxirane oxygen content of trivernolin.

and one at 2C. Oxirane oxygen content, iodine values and viscosities were determined on these samples each month for 8 months. The iodine values did not change appreciably during 8 months' storage. The viscosity measurements and oxirane oxygen values are shown in Figure 1. All viscosity measurements were made at  $30\text{C} \pm 0.1\text{C}$ . Although the results at 2C confirm our previous studies, we have not yet determined the cause of this unique behavior.

The viscosities of the sample stored at room temperature do not agree with our previously reported results (1) for samples exposed to light at room temperature. The refining process probably removed some

impurity that caused the samples in the previous studies to be unstable to light.

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#### REFERENCE

1. Scott, W. E., and C. F. Krewson, *JAOCS* **42**, 147 (1965).

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